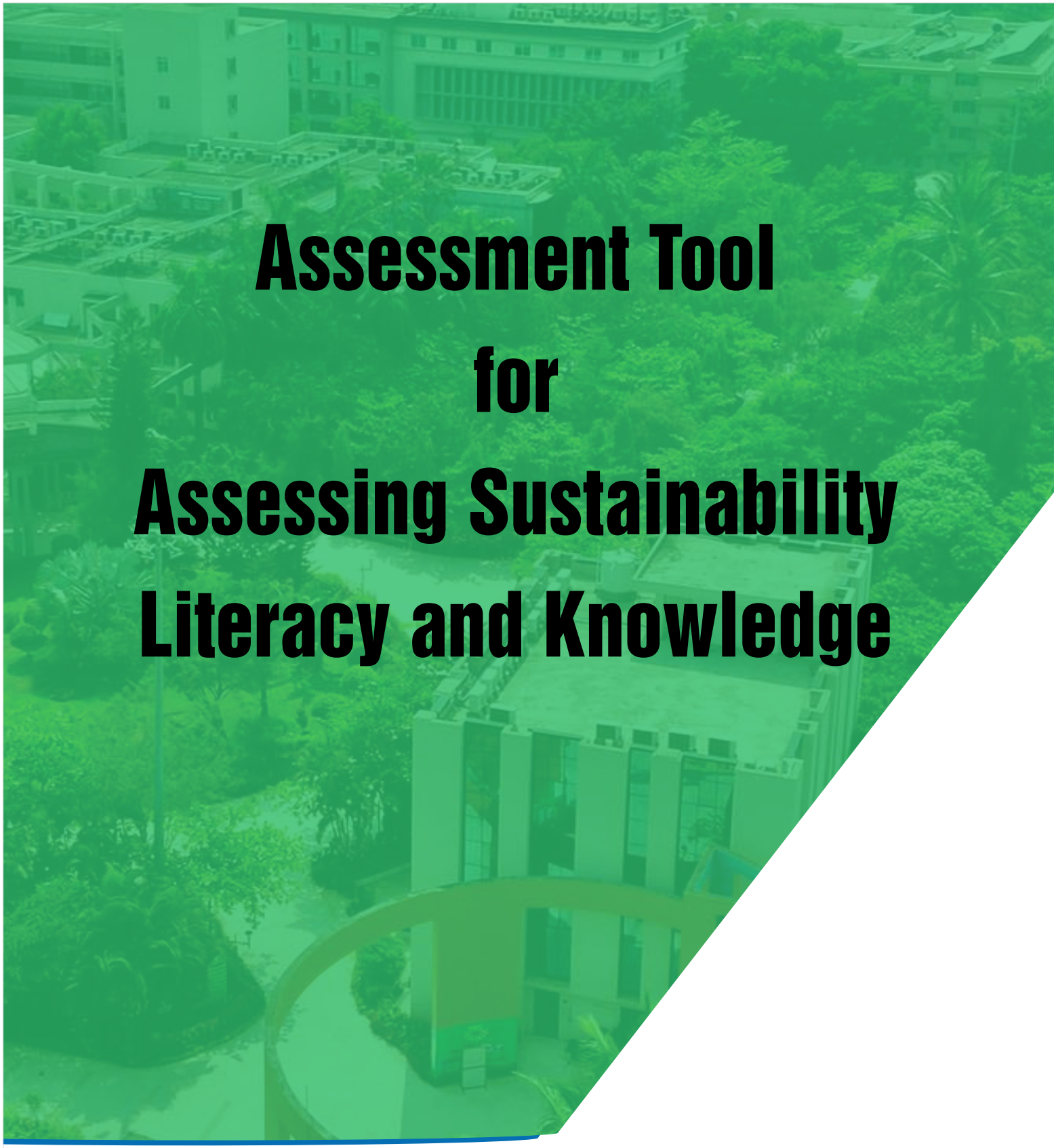

Assessment Tool for Assessing Sustainability Literacy and Knowledge

Kalinga Institute of Industrial Technology (KIIT)
Deemed to be University, Bhubaneswar

Assessment tool for assessing sustainability literacy and knowledge

Sustainable development is the universal essentiality of present times. Realizing this need KIIT-DU is implementing Sustainability Model through its Functioning, Policies and Practices. The 3 main pillars of Sustainability – Social, Economic, and Environmental are built into governance, operations, education, research and engagement.

The key dimensions of KIIT Sustainability Model are as follows:

- Governance – Vision and commitment, university scale policy and strategy, management structure and staff
- Operations–Consistofthreeaspects:environmental(environmentalmanagement, activities, and practices);social(health, safety, and quality of working and living); and financial (related to financial issues, including investments and budget, environmental issues, social issues, education, and research)
- Education–Curriculum, teaching and training for students and staff
- Research–Encouragement, support, and output of research
- Engagement – Consist of two aspects, "campus engagement (students with sustainability learning experiences outside the formal curriculum); Public Engagement (sustainable communities through public engagement, community partnership and services"

Incorporating the above dimensions of the Sustainability Model KIIT-DU is practicing the following Sustainability Assessment Tools namely:

- **KAP-AISHE [KIIT activity portal (KAP) and Assessment Instrument for Sustainable Development in Higher Education (AISHE)]:**

The KAP-AISHE sustainability assessment portal is envisioned as a comprehensive institutional tool designed to evaluate and enhance sustainability literacy among students, faculty, and staff, aligning with the Sustainable Development Goals defined by the United Nations. The methodology of the portal is structured around three core dimensions-knowledge and understanding, interlinkages or systems thinking, and decision-making ability-ensuring a holistic assessment of sustainability competencies. The assessment framework is further divided into thematic domains such as Earth Systems, Human Welfare, Governance, Economy, Technology, and SDG interlinkages, allowing for multidimensional evaluation. The question

design incorporates a blend of multiple-choice questions, case-based scenarios, assertion–reason formats, and data interpretation items, with a balanced distribution of difficulty levels to test awareness, conceptual clarity, and critical thinking. Typically comprising 40-60 randomized questions to be completed within 30-45 minutes, the system ensures fairness and robustness through question banks and option shuffling. Scoring is based on correct responses with optional negative marking, and results are computed across weighted categories, generating an overall score out of 100 along with domain-specific performance indicators. The output is presented through an interactive dashboard integrated into the KIIT Activity Portal (KAP), featuring visual analytics such as donut charts, category-wise bars, and benchmarking against institutional or global averages. Additionally, the system supports detailed analytics for administrators, including department-wise performance, longitudinal tracking, and comparisons between different user groups, making it valuable for academic planning and accreditation processes. A curated and continuously updated question bank, validated by subject experts and potentially enhanced through AI tools, ensures relevance and accuracy, while a certification mechanism provides digital credentials and competency badges to participants. Technically, the platform comprises modules for user management, assessment delivery, analytics, and reporting, seamlessly integrated with existing KAP infrastructure to enable single sign-on and linkage with faculty and student performance systems. The implementation follows a phased approach, beginning with framework design and pilot testing before full-scale deployment across the university. Advanced features such as multilingual support, mobile compatibility, adaptive testing, and gamification can further enhance user engagement. Ultimately, the KAP-AISHE portal distinguishes itself by incorporating India-specific sustainability contexts, institutional performance metrics, and direct alignment with national higher education reporting systems, thereby serving as both an assessment and strategic decision-making tool for sustainable development in higher education.

KAP-AISHE Sustainability Assessment

KIIT University · Kalinga Institute of Industrial Technology, Bhubaneswar

July 2025 – December 2025

Dr. Siddharth Swarup Rautaray
Associate Professor
School of Computer Engineering · KIIT University

CATEGORY SCORE

89/100	82/100	86/100
Knowledge (K)	Attitude (A)	Practice (P)

HOW DO I COMPARE?

University average: **52/100**

Domain scores

82/100	88/100	94/100
Earth Systems	Human Welfare	Levers of Opportunity

Detailed score breakdown

THEME / SUB-THEME	SCORE	PROGRESS
3.1 Governance	96.3 avg	
3.1.1 Laws, Policies & Institutions	92.5 /100	
3.1.2 Infrastructure, Planning & NRM	100.0 /100	
3.2 Economy & Finance	100.0 avg	
3.2.1 Macroeconomic Considerations	100.0 /100	
3.2.2 Microeconomic, Business & Industry	100.0 /100	
2.1 Health & Wellbeing	88.0 avg	
2.1.1 Physical & Mental Health	85.0 /100	
2.1.2 Community & Social Equity	91.0 /100	
1.1 Earth Systems & Resources	82.0 avg	

1.1.1 Climate & Atmosphere	78.0 /100
1.1.2 Biodiversity & Ecosystems	86.0 /100

KIIT University · KAP-AISHE Portal · School of Computer Engineering Assessment ID: AISHE-2023-SCE-001

Components of KAP-AISHE:

The components of the KAP-AISHE are essential for both students and faculty as they collectively promote a comprehensive understanding of sustainability beyond theoretical knowledge. For students, these components enhance critical thinking, problem-solving abilities, and real-world application of sustainability concepts through experiential learning methods such as case studies, projects, and campus-based scenarios. They also foster responsible attitudes and prepare students to address global and local sustainability challenges in their professional careers.

For faculty, the components provide a structured framework to integrate sustainability into teaching, research, and assessment practices. They support interdisciplinary collaboration, improve curriculum design, and enable data-driven academic planning through performance analytics. Overall, these components help create a sustainability-driven academic ecosystem aligned with national priorities and global sustainable development goals, contributing to institutional excellence and societal impact.

1. Campus-based Scenarios

The campus-based Scenarios component is designed to contextualize sustainability assessment within the institutional environment. It presents real-life situations derived from campus operations such as energy usage, waste management, water conservation, and transportation systems. Participants are required to analyze these scenarios and propose practical, sustainable solutions. This approach enhances applied learning, decision-making ability, and encourages active engagement with campus sustainability initiatives.

2. Local Case Studies

The local case studies component emphasizes region-specific sustainability challenges and practices. It incorporates case studies relevant to the local and national context, enabling participants to understand sustainability issues within their immediate environment. Through critical analysis of real-world examples, this component strengthens problem-solving skills,

contextual awareness, and the ability to evaluate sustainable interventions in diverse socio-economic settings.

3. Course Work and Assignments

This component integrates sustainability into academic curricula through structured coursework and assignments. It promotes interdisciplinary learning by encouraging students to apply sustainability concepts within their respective fields of study. Activities may include research assignments, field-based studies, and analytical reports, fostering a strong connection between theoretical knowledge and practical application.

4. Capstone Projects and Theses

The capstone projects and theses component facilitates advanced learning and research in sustainability. Students are encouraged to undertake comprehensive projects addressing real-world sustainability challenges. This component supports innovation, critical analysis, and the development of long-term solutions aligned with sustainable development goals. It also contributes to institutional research output and knowledge creation.

5. Sustainable Fundamentals Quiz

The sustainable fundamentals quiz serves as a standardized tool to assess foundational knowledge of sustainability concepts. It includes topics such as environmental systems, social equity, economic sustainability, and global frameworks. The quiz is designed with diverse question formats and varying difficulty levels to evaluate awareness, conceptual clarity, and analytical ability in a structured manner.

6. Reflective Essays

The reflective essays component provides a qualitative dimension to the assessment process. It allows participants to articulate their understanding, personal experiences, and perspectives on sustainability. This component encourages critical thinking, ethical reflection, and the development of values necessary for responsible and informed decision-making in sustainable development.